

Neches white clover: a new cultivar for the US southern region

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Neches White Clover

- Origin of the name “Neches”
 - The Neches river flows through east Texas, 416 miles from Van Zandt county to the mouth of Sabine Lake on the Gulf Coast
 - Named by the Spanish explorers for the Neches Indians



White Clover – US Southern Region

General Information

- Forage production is late, relative to other winter annual forages – peak in late April to mid May
- Shallow rooted, low drought tolerance, tolerates flooding and wet conditions
- Best adapted to bottomland sites with clay to clay loam soils
- Often does not survive as a perennial but can be managed as a reseeding annual



Neches White Clover

- Neches white clover (*Trifolium repens* L.) is a synthetic variety of intermediate white clover with 147 parent plants selected for early and profuse flowering in combination with increased leaf size, and high potential forage production. Parent populations are diverse.





Neches White Clover

- Parent plants originated from five breeding populations that had been previously selected for early flowering through one or two cycles of recurrent selection. Breeder seed was produced under field isolation near Overton, TX in 2005.



Neches White Clover

- Parentage of Neches traces to the following germplasm sources:
 - VRPop (36%)
 - PI 298485 (34%)
 - PI 404930 (17%)
 - local ecotypes collected from Smith and Anderson counties, TX (10%)
 - VRG2 (3%)



Neches White Clover

- PI 404930
 - Collected in Uruguay by Burson and Langford in 1975
 - Evaluated in Louisiana by Alison in 2000
 - 39% survival after one year
 - Third best in trial for survival
- PI 298485
 - Donation to NPGS from Israel in 1964
 - Evaluated in Louisiana by Alison in 2000
 - 43% survival
 - Second best in trial for survival



Neches White Clover

- local ecotypes collected from Smith and Anderson counties, TX (10%)
 - Collected from heavily grazed pastures that had no recent white clover planting history
 - Profuse flowering types with moderate leaf size



Neches White Clover

- Two populations from Gary A. Pederson, USDA – ARS
 - **VRPop** – selected for 2 yr survival, spread, flowering and no virus infection at Mississippi State (in tall fescue sod). Origin from 9 populations below.
 - Drought tolerant synthetic
 - PSV hypersensitive
 - VRG - 3 yr survivors from SRVR
 - AMV resistant – 3 cycles of selection
 - MSNR4 – nematode resistant
 - NC7 – population from Dr. Cope’s program
 - SRVR x Osceola – improve flowering in SRVR
 - Brown Loam #6
 - WCMV resistant



Neches White Clover

- Two populations from Gary A. Pederson, USDA – ARS
 - **VRG2** -- selected for 2 yr survival, spread, flowering and no virus infection at Mississippi State (in tall fescue sod). Origin below.
 - Third cycle of selection for persistence and flowering out of SRVR. First two cycles grown three years in field and last cycle grown two years.

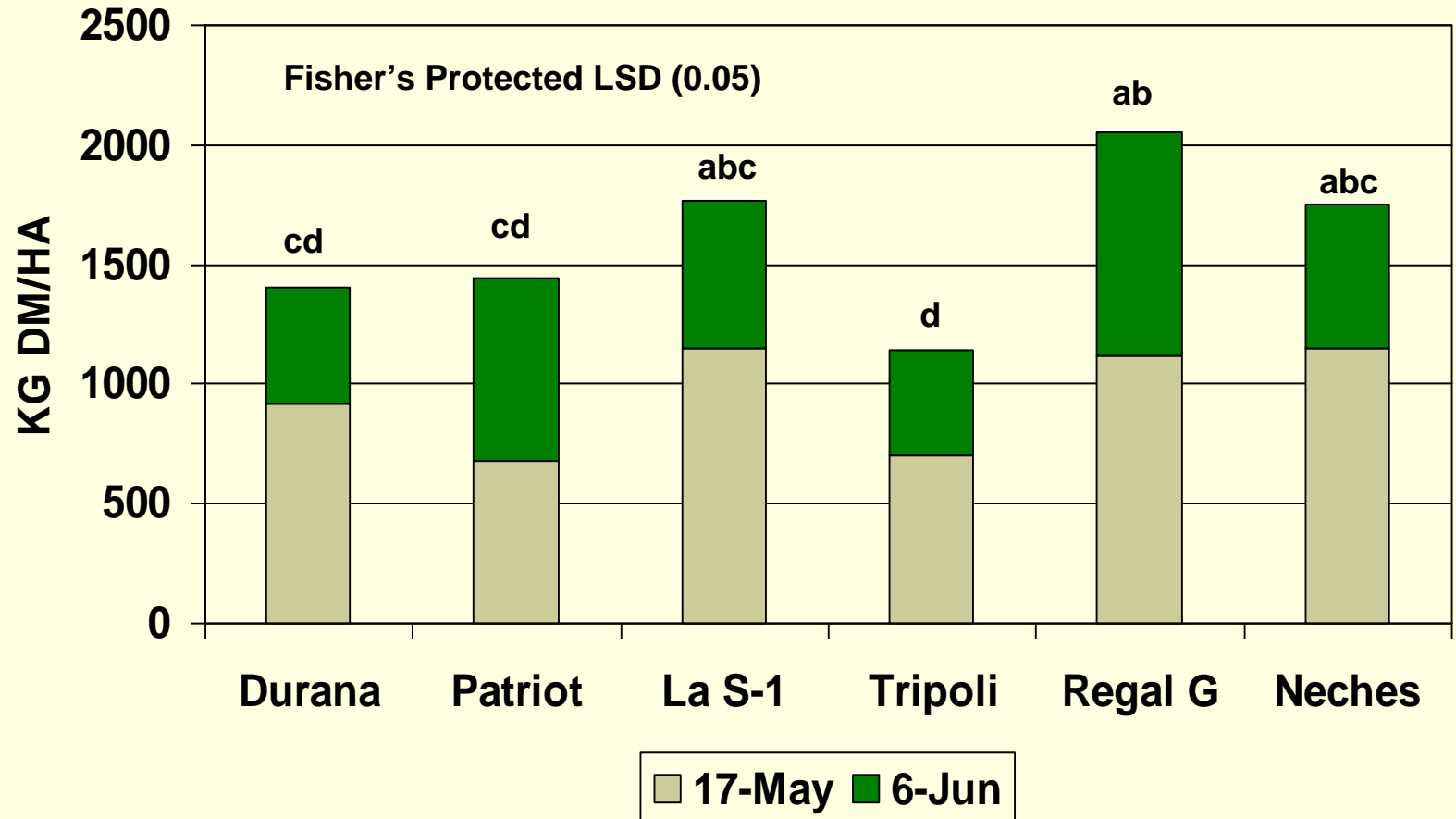
Neches White Clover

5 populations

Each population subjected to recurrent selection for early and profuse flowering (1 or 2 cycles; 1999 - 2004)

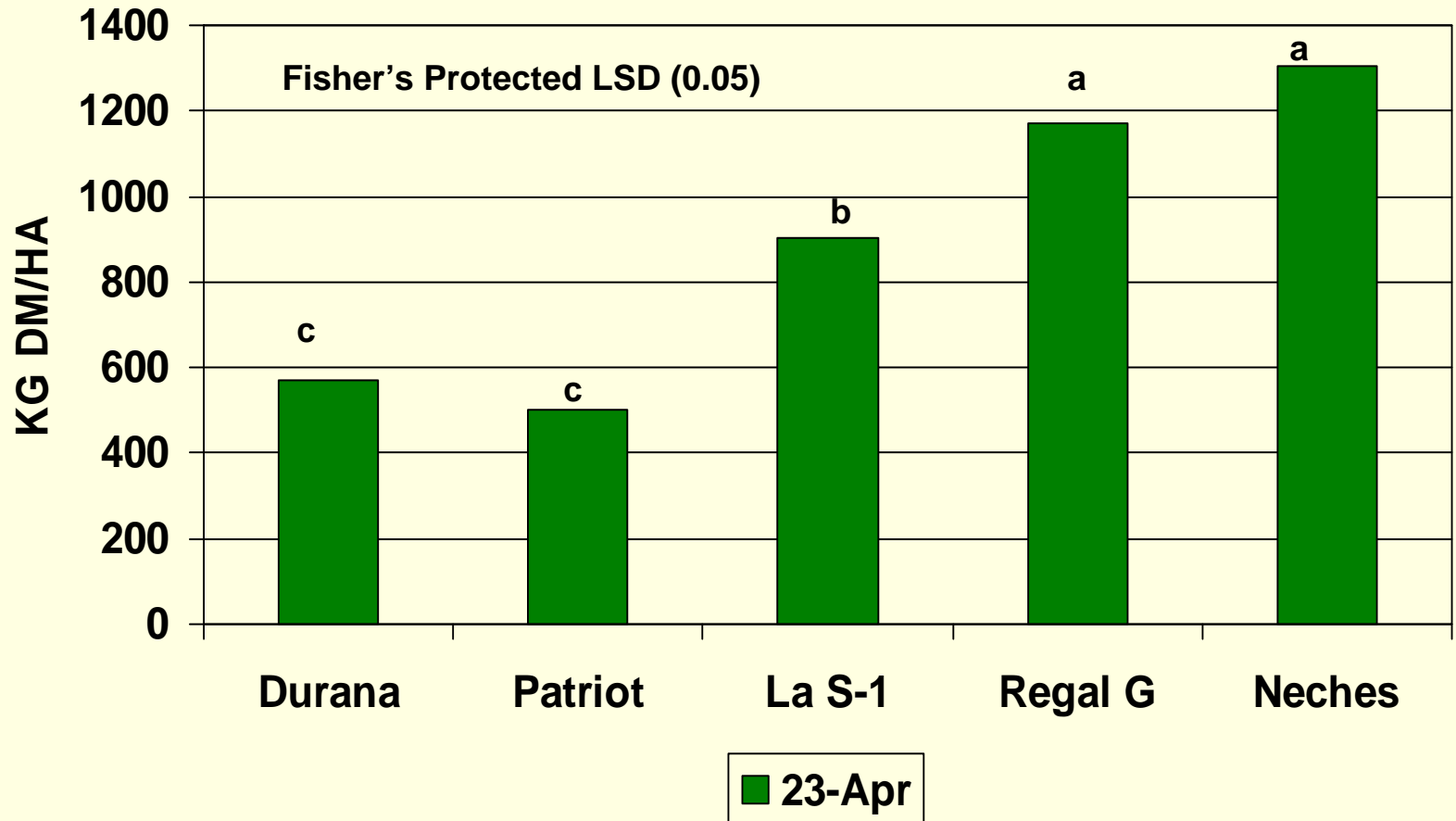
All 5 modified populations space planted into parental block (2004-05). 147 parents chosen based on early and profuse flowering and forage potential. Seed from all parent plants bulked. Breeder seed was increased in Oregon in 2006 and 2007.

White Clover Forage Yield Overton, TX 2007



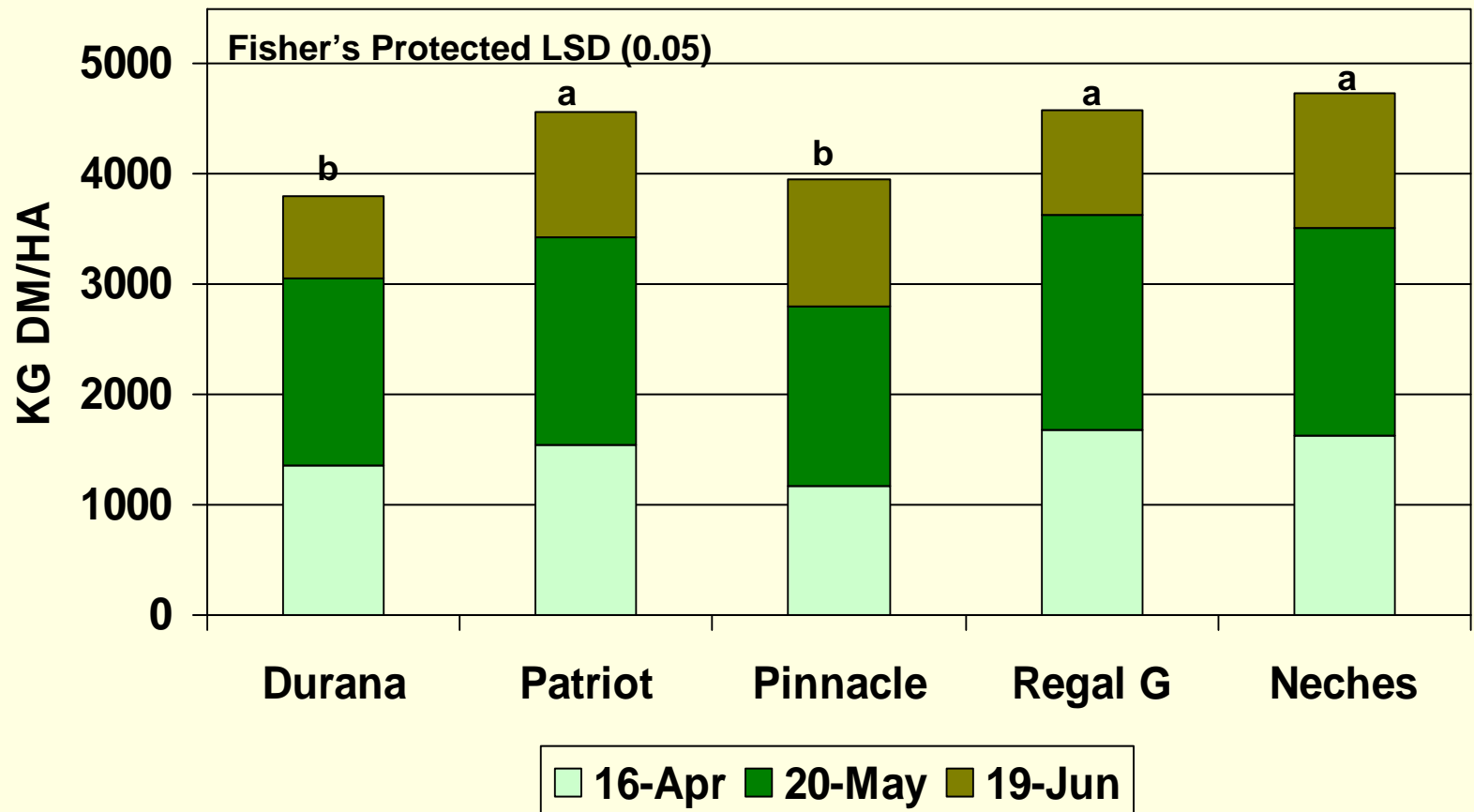
White Clover Forage Yield

Overton, TX 2008



White Clover Forage Yield

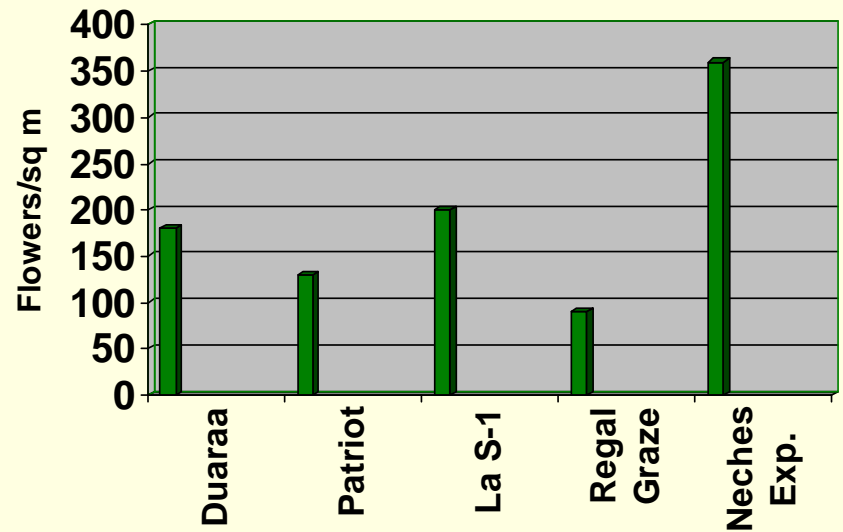
Winnsboro, LA 2008



White Clover Flowering

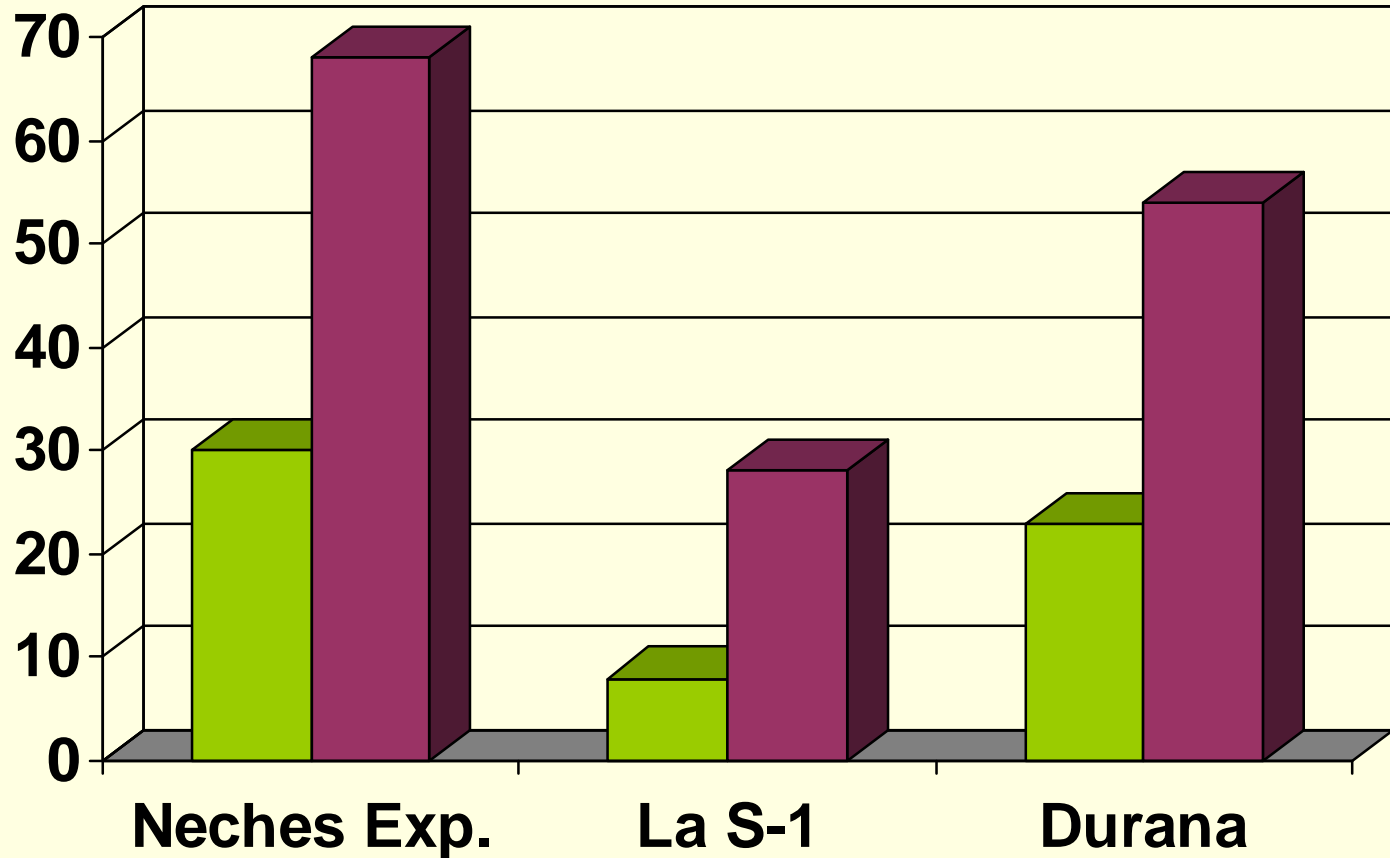


Flowering, April 30, 07



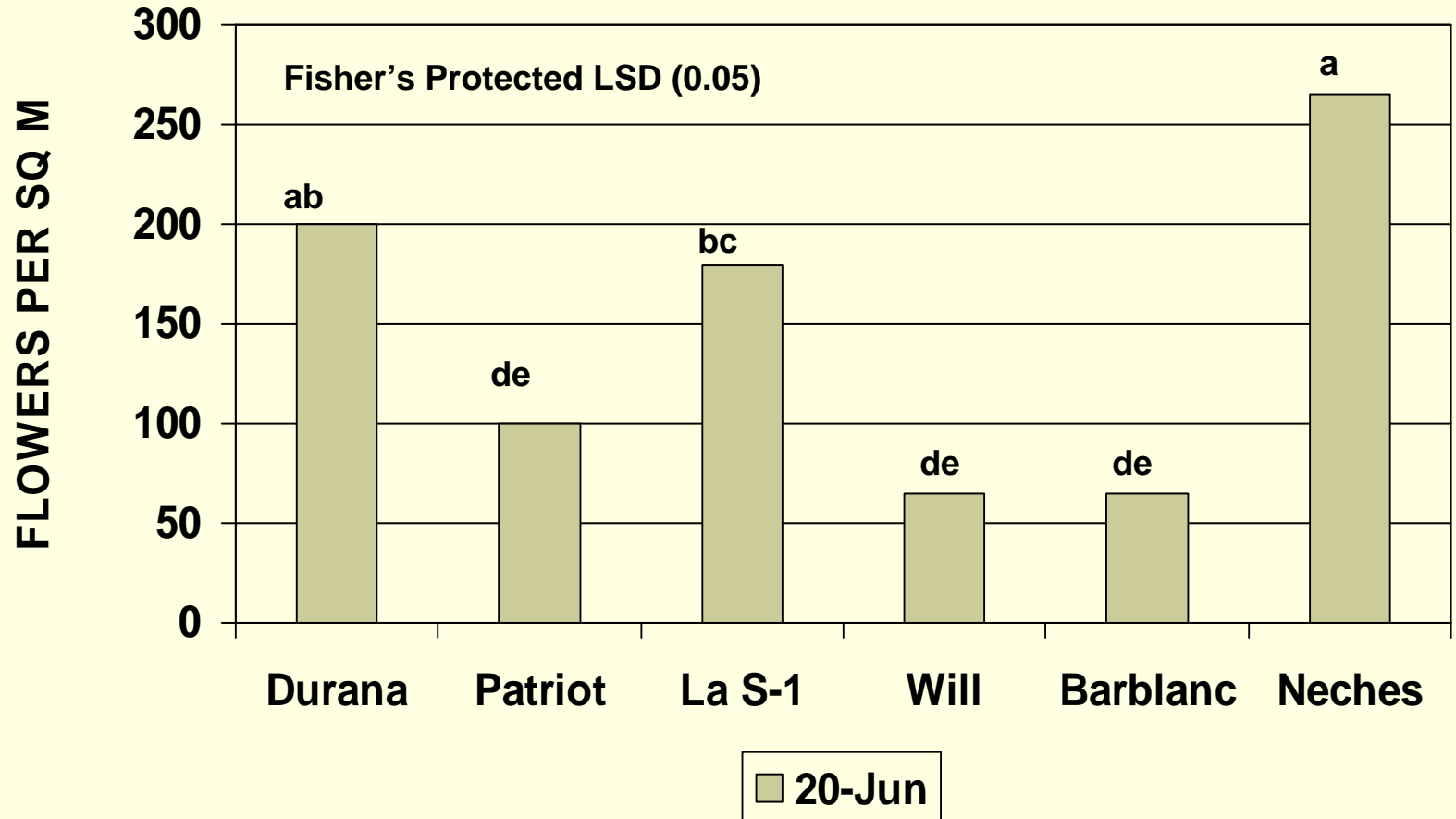
Overton, Texas

Flowering Data, Overton, TX, 2007

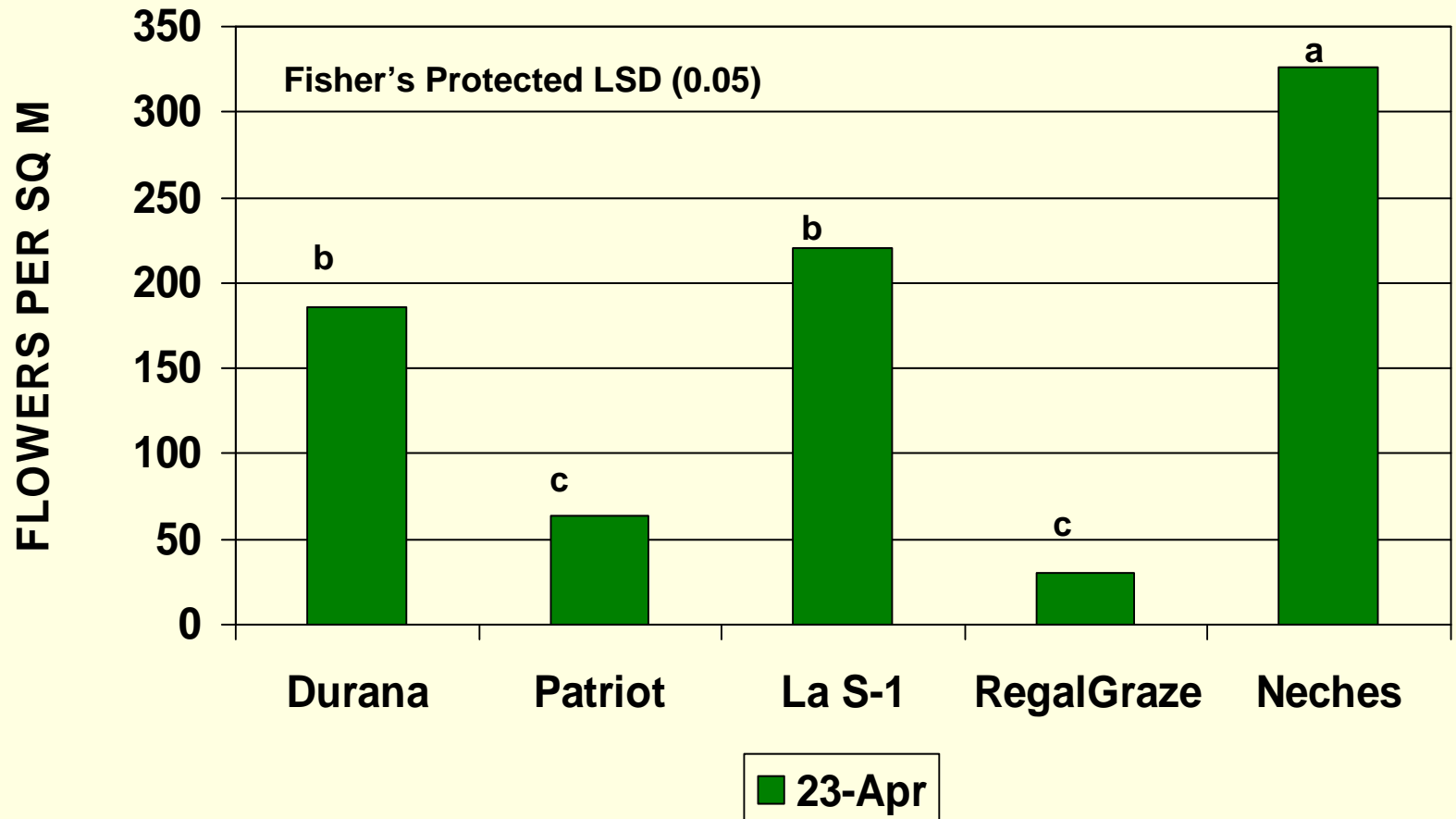


■ 3-22 % bloom ■ 4-16 % full bloom

White Clover Flowering Overton, TX 2007



White Clover Flowering Overton, TX 2008





Neches White Clover

- Neches flowers early compared to La S-1 and slightly earlier than Durana. Neches is in full bloom by mid-April at Overton, TX. Leaf size of this new cultivar is 20% larger than Durana. Forage yield is generally equal to La S-1 and RegalGraze
- Cultivar release of Neches white clover was approved by Texas AgriLife Research and the Texas A&M University System in Jan. 2010.

